

# CHARLOTTE SWAVOLA

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## EXPERIENCE

### **Senior Data Scientist**

**Jan. 2019 - Oct. 2020**

*Capital One Financial Corporation*

- Implemented and managed behavioral risk models including impact analysis across business areas, data quality validation, and communication with CDO.
- Owned real-time data quality controls for business continuity reporting directly to CDO, including metric developments for structured and unstructured data, integration of change-point detection, and platform and language migration.
- Developed metadata driven modules to automate data ingestion validation and quality monitoring, including data wrangling across cloud, internal, and software databases, dynamically generated visualizations, and distribution analyses.
- Integrated new data sources for decisioning including tool/package development for data wrangling, data validation for risk models and credit decisioning, and managing cross-functional teams to implement process improvements across business operations.

### **Photovoltaic Laboratory Coordinator**

**Oct. 2016 – Sept. 2017**

*Heraeus Photovoltaics, Conshohocken, PA, USA*

- Managed KPI dashboards including collection and analysis of efficiency data to identify improvement targets
- Coordinated laboratory activities in a research environment including resource and facility management and process improvement
- Implemented continuous improvement using the 5S/Kaizen lean manufacturing principles
- Conducted SEM analysis of photovoltaic samples

### **Quality Control Supervisor**

**Mar. 2015 – Oct. 2016**

*Johnson Matthey ECT, Inc., Wayne, PA, USA*

- Supervised multiple chemical and engineering testing laboratories to conduct production analysis of catalytic converters
- Developed a team of employees and manage documentation and testing databases

## EDUCATION

### **Master of Information and Data Science**

**Mar. 2019**

**University of California, Berkeley**

### **Bachelor of Arts, Chemistry**

**May 2013**

**Temple University**

*Director's Honor Roll; Temple Lacrosse, Division I, Atlantic 10 Conference*

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## KEY ACADEMIC PROJECTS

### CodeAssist - *Featured in UC Berkeley Capstone Showcase* **HTML/CSS/JS, Python**

Medical billing tool that leverages NLP within ensemble models to predict billing code classification for practitioners using preoperative notes and predict billing mistakes. Feature generation using tokenization, stemming, lemmatization, and other NLP techniques, one vs many logistic regression ensemble model for classification and CNN (with GloVe embedding) model for risk prediction. Models trained and tool hosted using Amazon EC2.

### Voulez Vous du Vin?

**R**

Design, launch, and analysis of a multifactorial advertising experiment to evaluate the impact of foreign language marketing on perceived value of wine. Statistical analysis and Hypothesis testing using randomization inference, robust linear regression and binary logistic regression models.

### Social Characteristics

Proposed framework for the design of privacy experiments in a social network setting and interpretation for experiments from multiple privacy contexts (retail, health, etc.) in order to apply their methodology or findings to social network privacy studies.

## TECHNICAL SKILLS

- Experimental design and statistical analysis for causality testing using regression modelling and randomization inference
- Predictive modelling and time-series forecasting using supervised and unsupervised machine learning with Scikit-learn, Pandas, and Tensorflow, and h2o.
- Application of classification models and clustering algorithms
- Data visualization, dashboard development, and data quality pipeline design
- Natural language processing including POS tagging, sentiment spectrum analysis, and assembling deep learning algorithms
- Privacy framework classification for experimentation design and user policy impact analysis
- Data and analytics tools/languages: Python, R, SQL, Tableau, JS/CSS/HTML, AWS
- Project management including risk analysis and asset management, team coordination using agile framework, stakeholder presentations, and project planning software